

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
6 May 2005 (06.05.2005)

PCT

(10) International Publication Number
WO 2005/039752 A1

(51) International Patent Classification⁷: **B01J 19/08**, 8/18,
8/42, C01B 33/18, 33/16, C08G 77/06

(21) International Application Number:
PCT/EP2004/011610

(22) International Filing Date: 8 October 2004 (08.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0324147.8 15 October 2003 (15.10.2003) GB
0324143.7 15 October 2003 (15.10.2003) GB
0403132.4 12 February 2004 (12.02.2004) GB

(71) Applicant (for all designated States except US): **DOW CORNING IRELAND LIMITED [IE/IE]**; Unit 12, Owenacurra Business Park, Midleton, CO Cork (IE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BUNCE, Timothy,**

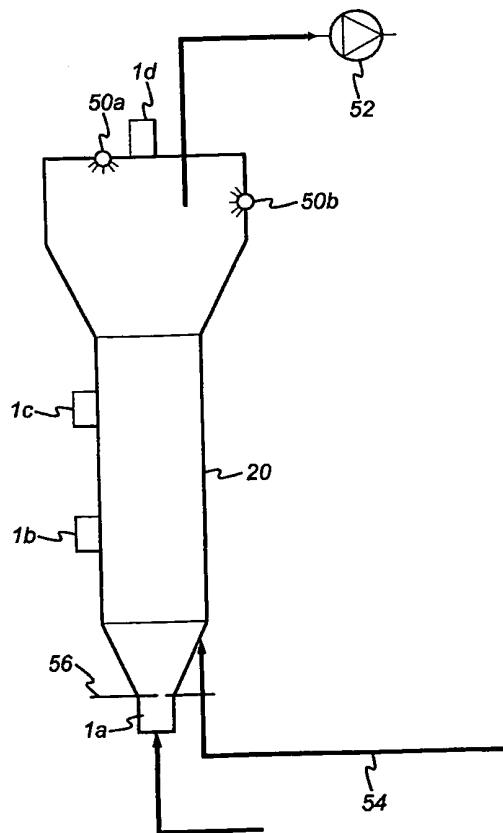
Rex [GB/GB]; 6 Raglan Court, Llantwit Major, Vale of Glamorgan CF61 1TB (GB). **PARBHOO, Bhukandas** [BE/GB]; Suraj, Weston Avenue, Sully CF64 5SW (GB). **CHEVALIER, Pierre** [FR/BE]; Avenue Adolphe Wansart, 25, B-1180 Bruxelles (BE).

(74) Agents: **DONLAN, Andrew, M. et al.**; Dow Corning Limited, Cardiff Road, Barry CF63 2YL (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: MANUFACTURE OF RESINS



WO 2005/039752 A1

(57) Abstract: A method of forming a powder and/or discrete gel particles of a compound selected from the group of a metallic oxide, a metalloid oxide, a mixed oxide, an organometallic oxide, an organometalloid oxide, an organomixed oxide resin, and/or an organic resin from one or more respective organometallic precursor(s), organometalloid precursor(s) and/or organic precursors and mixtures thereof, comprising the steps of passing a gas into a means for forming excited and/or unstable gas species (1a), typically an atmospheric plasma generating means; treating said gas such that upon leaving said means the gas comprises excited and/or unstable gas species which are substantially free of electrical charges at a temperature of between 10 °C and 500 °C. A gaseous and/or liquid precursor is then introduced (50a,50b) into said excited and unstable gas species in a downstream region external (20) to the means for forming excited and/or unstable gas. The interaction between the precursor and the excited and unstable gas species results in the formation of a powder and/or discrete gelled particles which are subsequently collected. The particles prepared by the method may be subsequently functionalised.



(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*